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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
DIVISION OF AGRICULTURAL ENGINEERING

S. H. McCrory, Chief.

MONTHLY NEWS LETTER

WASHINGTON, D. C., JULY 20, 1926.

MR. McCRORY, AFTER THE ANNUAL MEETING OF A.S.A.E. AT LAKE TAHOE, VISITED BERKELEY, LOS ANGELES, AND OTHER POINTS IN CALIFORNIA WHERE OUR WORK IS IN PROGRESS, THEN PROCEEDED TO CORVALLIS, OREGON, AND TO DUPONT, WASHINGTON. BEFORE RETURNING TO WASHINGTON, ABOUT AUGUST 1, HE EXPECTS TO SEE MR. MARR AT BOISE, AND MR. PARSHALL AT FORT COLLINS, COLORADO, POSSIBLY MAKING A TRIP TO MONTANA ALSO.

MESSRS. BOYD AND KINSMAN AT THIS WRITING ARE STILL IN THE FAR WEST; MR. BOYD IN CONNECTION WITH PYROTOL DISTRIBUTION AND MR. KINSMAN IN CONNECTION WITH THE STUDY OF COMBINED HARVESTER-THRESHERS. D. G. MILLER RETURNED TO ST. PAUL, MINNESOTA, JULY 15, FROM LAKE TAHOE, VIA WASHINGTON AND OREGON.

MESSRS. HUMPHRIES AND HURST REPORT PROGRESS IN THE COMBINED HARVESTER-THRESHER STUDY IN KANSAS. FROM THAT STATE THEY WILL PROCEED INTO NEBRASKA AS THE HARVESTING SEASON MOVES NORTHWARD.

F. E. STAEBNER RETURNED FROM AN EXTENSIVE WESTERN TRIP ON JUNE 28, DURING WHICH HE VISITED VARIOUS COLLEGES AND STATIONS IN HIS STUDY OF THE SUBJECT OF SOIL MOISTURE.

R. D. MARSDEN, AFTER ABOUT TWO MONTHS IN THE DELTA STATES WITH R. P. TEELE OF THE BUREAU OF AGRICULTURAL ECONOMICS, IN CONNECTION WITH THEIR STUDY OF DRAINAGE DISTRICT DEVELOPMENT, HAS RETURNED TO WASHINGTON TO WORK UP THE DATA SECURED.

ON JULY 1, B. S. CLAYTON LEFT CLEVELAND, MISS., FOR WISCONSIN, WHERE HE HAS TAKEN UP THE SURVEY OF THE WOLF RIVER IN COOPERATION WITH THE UNIVERSITY OF WISCONSIN AND A LAND-OWNERS' ASSOCIATION. THIS PROBLEM INVOLVES THE PREVENTION OF THE OVERFLOW OF VALUABLE FARM LANDS IN THE VALLEY OF WOLF RIVER.

P. T. SIMONS HAS SUBMITTED HIS RESIGNATION TO TAKE EFFECT THE LATTER PART OF THIS MONTH. MR. SIMONS WILL ENGAGE IN WORK OUTSIDE THE GOVERNMENT SERVICE. HE ENTERED THE SERVICE IN 1916 AND HAS BEEN ENGAGED IN VARIOUS PHASES OF DRAINAGE WORK SINCE THAT TIME. HE HAD CHARGE OF THE SURVEY OF THE RED RIVER OF THE NORTH, COVERED IN DEPARTMENT BULLETIN 1017, AND BEFORE BEING LOCATED AT McGEHEE, IN CONNECTION WITH RUN-OFF INVESTIGATIONS, WAS FOR A TIME ESTABLISHED AT MONTGOMERY, ALABAMA, IN CHARGE OF OUR DRAINAGE INVESTIGATIONS IN THAT STATE. MR. SIMONS WILL BE SUCCEEDED AT McGEHEE, ARKANSAS, BY WALTER D. ELLISON, RECENTLY APPOINTED AS JUNIOR DRAINAGE ENGINEER FROM CALIFORNIA.

A E L 15.

M. C. BETTS RETURNED TO THE OFFICE JULY 19 AFTER A TWO MONTHS' TRIP IN THE MIDDLE WEST WITH A REPRESENTATIVE OF THE BUREAU OF AGRICULTURAL ECONOMICS, STUDYING THE PROBLEMS CONNECTED WITH POULTRY AND EGG-PACKING PLANTS.

T.A.H. MILLER DELIVERED AN ADDRESS RECENTLY AT COLLEGE PARK, MD., BEFORE THE CONFERENCE OF RURAL MINISTERS ON THE SUBJECT "MODERN FARM AND HOME CONVENIENCES."

B. S. CLAYTON SUBMITS THE FOLLOWING DATA WITH REGARD TO THE VALUE OF "N" FOR BOGUE HASTY, WEST OF SHAW, MISSISSIPPI.

AVERAGE TOP WIDTH 57 FEET; BOTTOM WIDTH 25 FEET; DEPTH 9.5 FEET.

GAGE	DATE	AVERAGE: WIDTH	AVERAGE: MAXIMUM: DEPTH	Q	R	S	"N"
8.36	2/25/24	56.5	9.4	710	6.05	.000135	0.0320
4.69	4/17/24	45.7	5.7	319	3.80	.000147	0.0257
7.44	5/28/24	54.2	8.4	586	5.55	.000120	0.0296
6.71	12/17/25	52.0	7.7	391	5.14	.000099	0.0340
6.72	3/8/26	52.0	7.7	465	5.15	.000140	0.0338
4.35	3/9/26	44.5	5.4	204	3.59	.000114	0.0312
3.16	3/13/26	40.4	4.2	134	2.77	.000130	0.0312

THE ABOVE VALUES OF "N" ARE TAKEN FROM THE CURVE. THIS IS ABOUT AN AVERAGE PIECE OF DITCH WITH SOME VEGETATION ALONG THE BANKS AND A FAIRLY UNIFORM SECTION. THE COURSE IS 1000 FEET LONG AND STRAIGHT.

THE WASHINGTON OFFICE HAS RECEIVED A REPORT FROM F. O. BARTEL ENTITLED "CROSS SECTION MEASUREMENTS OF CHANNELS IN BUFFALO CREEK DRAINAGE DISTRICT, CLEVELAND COUNTY, N.C."

WE HAVE COMPLETED A VERY SATISFACTORY YEAR ON PYROTOL DISTRIBUTION. SHIPMENTS FOR LANDCLEARING FROM THE THREE PLANTS WERE AS FOLLOWS:

	PYROTOL DISTRIBUTED FISCAL YEAR 1926.	TOTAL PYROTOL DISTRIBUTED
BARKSDALE, WIS.	5,399,400	10,942,750
DUPONT, WASH.	3,969,150	7,227,750
GIBBSTOWN, N.J.	2,408,700	4,080,650

A CONFERENCE ON DRAINAGE MATTERS WAS HELD AT SALT LAKE CITY, UTAH, JUNE 19, 1926, AND WAS ATTENDED BY MESSRS. McCrory, McLaughlin, T. C. Adams, Gardner, Hart, Hutchins, Israelson, Jessup, Mitchelson, Director Petersen, Winsor, and Young.

HARRY F. BLANEY AND COLIN A. TAYLOR REPORT COMPLETION OF THE CLASS A EVAPORATION STATION AT VISTA, CALIF., IN CONNECTION WITH THE COOPERATIVE DUTY OF WATER STUDY OF SAN DIEGO COUNTY LANDS. FREQUENT SOIL SAMPLING ON THE CITRUS GROVES SHOWS THAT THE FIRST FOOT OF SOIL DROPS MOST RAPIDLY IN MOISTURE CONTENT; THE SECOND FOOT AT A LESSER RATE; AND THE THIRD, FOURTH, AND FIFTH FEET VERY SLOWLY.

A. L. FELLOWS VISITED POINTS IN NEW MEXICO, TEXAS, COLORADO, AND KANSAS IN CONNECTION WITH HIS STUDY OF THE IRRIGATION NEEDS AND POSSIBILITIES OF THE GREAT PLAINS. WESTERN KANSAS IS SAID TO BE SUFFERING SEVERELY FROM DROUGHT THIS YEAR.

R. G. HEMPHILL IS ENGAGED IN GETTING UNDER WAY THE COOPERATIVE INVESTIGATION OF THE USE OF WATER IN RICE IRRIGATION AT BEAUMONT, TEXAS. CONSIDERABLE DIFFICULTY IS BEING EXPERIENCED IN THE INSTALLATION OF SUITABLE MEASURING DEVICES, DUE TO THE WIDE RANGE IN SIZE OF IRRIGATING HEAD AND THE LACK OF SUITABLE LOCATIONS FOR MEASURING DEVICES ON WASTE DITCHES.

WELLS A. HUTCHINS SPENT THE LAST HALF OF JUNE IN NORTHERN UTAH IN CONNECTION WITH THE STUDY OF MUTUAL IRRIGATION COMPANIES.

R. L. PARSHALL HAS BEEN GETTING INTO COMMISSION THE EXPERIMENTS ON EVAPORATION FROM MOIST SOILS AT THE FORT COLLINS, COLO., COOPERATIVE LABORATORY. OWING TO THE FACT THAT IT WAS FOUND THAT TEMPERATURE AFFECTED THE REGULATION OF THE MARIOTTE TUBES BECAUSE OF THE INCREASED VAPOR PRESSURE IN THE SPACE ABOVE THE WATER WITHIN THE SMALL RESERVOIR TANK, MEASURES HAVE BEEN TAKEN TO ELIMINATE THE EFFECT OF TEMPERATURE. TO THIS END THE TANKS HAVE BEEN COVERED WITH A LAYER OF CORRUGATED ASBESTOS, OVER THIS A PROTECTING COAT OF HEAVY BUILDING PAPER, AND SURROUNDED BY DRY SHAVINGS WHEN MOUNTED IN PLACE WITHIN THE OUTSIDE WOODEN BOX. AS A FURTHER PRECAUTION, ALL BOXES HAVE BEEN GIVEN A LIBERAL COAT OF WHITEWASH. ONE TANK HAS BEEN KEPT AS A CHECK TO DETERMINE THE EFFECT OF TEMPERATURE, AND FOR A PERIOD OF ABOUT TWO WEEKS ONLY ONE MILLIMETER HAS BEEN THE GREATEST CHANGE OBSERVED.

CARL ROHWER SPENT NEARLY HALF THE MONTH TESTING THE SINGLE HUMP, JUMP FLUME DESIGNED BY MEMBERS OF THE IRRIGATION COMMITTEE OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS. IN DESIGNING THIS FLUME IT WAS ASSUMED THAT BY MEASURING THE CRITICAL DEPTH IN THE CONTRACTED SECTION, THE THEORY OF THE FLUME WOULD BE PLACED ON A RATIONAL BASIS. HOWEVER, IT WAS FOUND THAT, DUE TO CARITATION, IT WAS IMPOSSIBLE TO MEASURE THE CRITICAL DEPTH, AND CONSEQUENTLY THE TESTING OF THE FLUME WAS DISCONTINUED.

F. C. SCOBEEY AND PAUL A. EWING, VISITED TWO IRRIGATION DISTRICTS NEAR SUSANVILLE, AND OTHER SYSTEMS IN NORTHERN CALIFORNIA, SECURING TESTS ON FLOW OF WATER IN FLUMES. A SUCCESSFUL EMERGENCY REPAIR, MADE AT NOMINAL COST, WAS NOTED ON A LONG WOOD-STAVE PIPE NEAR SUSANVILLE, WHERE SHEET METAL, SLIPPED UNDER THE BANDS, HAD STOPPED SERIOUS LEAKS AND APPARENTLY PROLONGED THE LIFE OF THE PIPE AT LEAST THROUGH THE PRESENT SEASON.

W. L. STOCKWELL, JR., HAS MADE PRELIMINARY SURVEYS OF SEVERAL SMALL RESERVOIR SITES IN THE MUDDY VALLEY, NEVADA, FOR FLOOD CONTROL AND STORAGE PURPOSES; THE SITES HAVE STORAGE CAPACITIES OF 4000 TO 5000 ACRE-FOOT AND RANGING IN COST FROM \$2.50 TO \$7.10 PER ACRE-FOOT. A SMALL AMOUNT OF FLOOD CONTROL ON THE MEADOW VALLEY WASH WOULD PREVENT TO A LARGE EXTENT THE FLOODING AND WATER-LOGGING OF FARM LANDS IN THE MUDDY VALLEY, AND INCIDENTALLY FURNISH STORAGE FOR A LIMITED AMOUNT OF WATER FOR IRRIGATION.

L. M. WINSOR STATES THAT MEETINGS HAVE BEEN HELD AT FARMINGTON AND WILLARD, UTAH, FOR THE PURPOSE OF REACHING A DECISION AS TO HOW THE WORK OF MAINTAINING THE GRAVEL-CONTROL STRUCTURES IS TO BE FINANCED AND DIRECTED. AT EACH PLACE A COMMITTEE HAS BEEN APPOINTED FROM THE VARIOUS GROUPS INTERESTED AND GIVEN POWER TO LEVY ASSESSMENTS AND SUPERVISE THE WORK OF MAINTENANCE. THE LOCAL REPRESENTATIVE OF THIS DIVISION HAS BEEN REQUESTED BY EACH COMMITTEE TO ACT WITH THE COMMITTEE IN AN ADVISORY CAPACITY.

THE BERKELEY OFFICE HAS RECEIVED FROM S. H. BECKETT AND H. F. BLANEY A PROGRESS REPORT ENTITLED "ECONOMIC WATER REQUIREMENTS OF SAN DIEGO COUNTY LANDS."

W. L. Stockwell, Jr., has made preliminary surveys of several small reservoir sites in the Reno Valley, Nevada, for flood control and storage purposes. The sites have storage capacities of 4000 to 6000 acre feet and ranging in cost from \$250 to \$750 per acre foot. The amount of flood control on the Reno Valley which would prevent total loss of extent the flooding and waterlogging of farm lands in the Reno Valley and incidentally furnish storage for a limited amount of water for irrigation.

J. M. Winsor states that meetings have been held at Farmington and Willard, Utah, for the purpose of reaching a decision as to how the work on maintaining the gravel-control structures is to be financed and directed. At each place a committee has been appointed from the various groups interested and given power to levy assessments and supervise the work of maintenance. The local representative of this division has been requested by each committee to act with the committee in an advisory capacity.

The Berkeley office has received from S. H. Bennett and H. E. Blaney a progress report entitled "Economic Water Requirements of San Diego County Lands."